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REPORT ON HYDROPHOBIA.

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REPORT ON HYDROPHOBIA.

BY CHARLES W. DULLES, M.D.,
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SINCE I first began to make the disorder called hydrophobia the subject of special study, nothing has given me more encouragement than the request of this Society at its meeting in Williamsport in 1886, that I continue my study and report its results to the Society. This request was the more welcome because it seemed to furnish a confirmation of my hope that it might prove useful for one to make a serious matter the subject of continuous investigation, and to lay before his professional brethren, from time to time, the results of his studies.

A year ago, I gave you a brief statement of the developments in regard to hydrophobia during the year then completed, and this required me to devote considerable space to the progress of the method of Pasteur. To-day I can spare you any long presentation of this part of the subject, for the reason that Pasteur's method hardly attracts any attention now, and seems to be in a fair way to die a natural death. The result of his operations may be gathered from a report of Dr. Dujardin-Beaumetz on the subject of hydrophobia in Paris, during 1887, published in the *Gazette Hebdomadaire* of March 9, 1888.

According to this report, there were nine deaths from hydrophobia in Paris during that year, which was *more* than in 1880, 1883, 1884, or 1886. Five of these deaths were of persons less than fifteen years old. In one of the cases the patient was not bitten at all, but was simply licked on an abraded spot. Eight of the patients were bitten by dogs, and one by a cat. Two of the nine patients had been treated by Pasteur; and their death is explained by Dujardin-Beaumetz on the ground that his method was not thoroughly carried out. The total number of persons treated by Pasteur was only 306 persons from Paris, bitten by dogs sup-



posed to be rabid, as against about 300 a month when I last addressed you.

This statement shows two very important things: One is, that the application of Pasteur's method has had no effect in reducing the usual mortality from so-called hydrophobia in Paris—which confirms the opinion in regard to its merits which I have repeatedly expressed; the other is, that, in spite of the artificial stimulus furnished by the French reception of Pasteur's method, the number of those who fall into the terror of hydrophobia is diminishing in France, and this leads to the hope that before long France will compare favorably with Germany and America, which have refused to be carried away by the false notions in regard to hydrophobia put forward by one who knows nothing about it but what he has manufactured in his laboratory.

It must impress you, I think, as it has impressed me, that there is a great significance in the fact that disbelief in the theories of Pasteur, which some of his partisans have stigmatized as harsh or unscientific, has been found to go with a singular immunity from the ravages of so-called hydrophobia. This holds true to such an extent that one may safely say that the degree of acceptance of Pasteur's theories in any country will furnish a measure of the number of cases and deaths from hydrophobia. In Germany these theories have never obtained a foothold, and hydrophobia is almost unknown; in America, the attempt to import them ended in speedy failure, and here hydrophobia is almost equally unknown.

You may, perhaps, be interested to learn that in our own State of Pennsylvania, not one case, even of suspected hydrophobia, has occurred since we met a year ago. And, from the whole of the United States, I have gathered only fourteen deaths (about one in each 4,000,000 inhabitants) from hydrophobia—credible or incredible—during the year since we last met.

I have carefully studied the details of these cases and have prepared an epitome of the history of each one for your study and reflection. You will see that only a few have been reported in the medical journals, and the majority of the accounts are derived from daily newspapers. This fact is to be regretted, and I would be glad to give you more reliable data than can be gained from secular papers; but my attempts have been almost fruitless when I tried to get precise histories of the cases; and I regret this the more

because when I succeeded in getting more accurate accounts, the cases lost many of the features of hydrophobia.

The following are the histories of these cases as I have been able to obtain them.

CASE I.—Man (Gurnee, Haverstraw, N. Y.). Bitten on thumb by pet dog, May 25, 1887. Dr. W. B. Bayley called, and “dressed” the wound. Dog died in a fit two days later. The patient was alarmed. June 20 had pain in same hand and side. June 22 could not drink or wash. Drs. Bailey and House called and agreed that he had hydrophobia. He had violent spasms, and was kept under the influence of anodynes, atropia, and morphia administered hypodermically. Dr. W. A. Hammond, of New York, was called in the evening and confirmed the diagnosis, and endorsed the treatment. The patient grew steadily weaker, and died June 23, 1887, at 10 A.M.—*Medical and Surgical Reporter*, July 23, 1887.

CASE II.—Woman, twenty years old (Delia Bentcliff, near Bridgeton). Attacked and severely bitten on back and shoulder, in March, 1887, by a large bulldog, which on account of his bad temper had been chained for several months. “The terrors of hydrophobia were constantly pictured to her,” and she became ill *with symptoms of typhoid fever*. Dr. Currie, of Beverly saw her in the beginning of July. He diagnosticated typhoid fever. This was followed by blood-poisoning. She now refused food and had convulsions, and “positive” signs of hydrophobia. She raved and frothed at the mouth. *Death* from exhaustion occurred July 20, 1887.—*New York World*, July 25, 1887.

CASE III.—Man (Hannibal Crosson, Faircloth, Georgia). Bitten slightly on the hand in March, 1887, while driving off a strange dog which had attacked two of his own dogs. Both these dogs subsequently died. July 17 he failed in an attempt to drink water and developed a dread of water. A physician diagnosticated hydrophobia, and had four men to hold the patient while a tablespoonful of water was administered as a test. Horrible convulsions followed. The patient “snapped, growled, and whined.” *Death* occurred July 22, 1887.—*New York World*, July 24, 1887.

CASE IV.—Man (James P. Cody, of Peoria, Illinois), twenty-three years old. July 3, 1887, a cat endeavored to pass him, struck against a gate-post and fell. The man picked it up, and was bitten in the left hand near the thumb. The cat had to be choked off. August 12 he was indisposed. The next day he swallowed water with difficulty, and had a “thrill” when he placed his hand in water. Hydrophobia was diagnosticated, and the man was transferred to a hospital at Sedalia, Missouri. Remedies for quieting him were given. August 15 he was restless, and an attempt to drink water caused convulsive movements. *Death* occurred at midnight.—*Philadelphia Inquirer*, August 19, 1887.

CASE V.—Man, seventy-eight years old (Cedar Springs, Mich.). Bitten, in 1839(!), on hand by a dog said to be rabid. Wound sucked and next day excised and cauterized. Two men bitten same day by same dog, one said to have died of “hydrophobia” in four weeks, and one of “blood-poison-

ing" in a few days. *Thirty-eight years later* the patient had horror of water, inability to drink, incessant spitting, paroxysms of violence caused by pouring or dripping water in his hearing. He tried to bite and tear his attendants. Dr. Fred. R. Boyd, who reports the case, gave him large doses of morphia hypodermically, five grains at a time until twenty grains were given in a short period, and chloral hydrate. *Death occurred* September 18 (?), 1887. (The dates are mixed in the report.) He had had an attack of hydrophobia ten years after being bitten.—*The Medical Age*, Detroit, Mich., October 10, 1887.

CASE VI.—Man (Charles Cavanan, New York), twenty-seven years old. Bitten October 8 in little finger, by a bull-dog which he separated from another dog with which it was fighting. The wound was cauterized at Chambers Street Hospital and healed well. November 17 the man had a spasm of the throat when drinking beer at a bar, began to froth at the mouth, and became cross and sleepless. November 14, he went to the same hospital, where he had profuse salivation and convulsions, followed by delirium. Hypodermics of curare and morphia were used. He said he "knew he was going to die." A straight-jacket was put on him, and he was held by a strong nurse. *Death occurred* November 16, 1887.—*New York Herald*, November 17, 1887.

CASE VII.—Man (Samuel J. Foster, Sedalia, Mo.). No history of a bite. He came to the hospital in Sedalia, November 23, 1887, with pain of stomach. He "showed symptoms of hydrophobia" at 2 P.M., and was tied hand and foot, and bound to an iron bedstead. Soon after he had violent spasms. Hypodermics of curare were given, and then hypodermics of morphine. *He died at 7.25 P.M.* the same day.—*New York Tribune*, November 25, 1887.

CASE VIII.—Man (Marshwald, New York). Bitten September 8, 1887, by a Newfoundland dog, kept as a watch dog. No evidence that the dog was rabid or sick, but it was killed at once. The man was greatly alarmed, and went to a hospital every week to have the wound examined. He was a hard drinker, and was treated for *delirium tremens*. November 27 he went to the hospital saying he had hydrophobia. He was treated with brandy, chloral, digitalis, and hypodermics of curare. He was confined in a strait jacket, and several men were employed to hold him. *Death occurred* November 29, 1887.—*Medical and Surgical Reporter*, December 31, 1887.

CASE IX.—(See Case XII.) Man (George Norman, New London, Mo.). Bitten by dog last summer, but he paid no attention to it. No history of dog. November 28 he awoke from a dream that he was dying of hydrophobia, and told his friends of it, and immediately had symptoms. Six men struggled with him for twelve hours. He begged his friends to kill him; and finally *died in convulsions* November 29, 1887.—*Chicago Tribune*, December 1, 1887.

CASE X.—Man, fifty-two years old (Stephen Dietrich, Cincinnati, Ohio). October 17, 1887, his pet Scotch terrier returned after a few days' absence from home, and when playing with his master struck his lower lip so that it bled. (Not clear that it was not a wound made in lip by man's tooth.) The dog died four days later. December 1, while the man leaned over a vat

of scalding hot water, he had some difficulty in breathing. His friends told him that hydrophobia began that way. Dr. Andre called in the evening, and at once discovered symptoms of hydrophobia, and took him from his home at Camp Creek to the Good Samaritan Hospital at Cincinnati, after he had prepared to die and bade farewell to his wife. He arrived December 2, and came under the care of Dr. Whittaker, who regarded the case as one of hydrophobia, and lectured on the patient at a clinic. The man was tested with water. His treatment included chloral and morphia by the rectum and hypodermically, and cocaine and curare by the mouth, and chloroform by inhalation. The patient never slept; he spit incessantly, and insisted he would die of hydrophobia. *Death occurred* December 3, 1887. (See *Medical and Surgical Reporter*, December 17, 1887, and *Cincinnati Enquirer*, December 4, 1887.)

CASE XI.—Woman (Mrs. John Loughran, Hot Springs, Ark.). Bitten about October 15 by a vicious dog which had attacked her children. "A madstone was applied and no serious results were apprehended." December 2 she had a chill, and afterward dread of liquids and convulsions. She died December 4, 1887.—*Chicago Tribune*, December 6, 1887.

CASE XII. (See Case IX.).—Man, eighteen years old (George Norman, St. Louis, Mo.). Bitten on the nose about November 30, 1887, by a strange dog, to which he gave a bone. The dog ran away and nothing was thought of the bite. January 24, 1888, said he had hydrophobia. Dr. Dunlap was summoned. Chloroform given; tests with water caused spasms; but he could and did not drink water and milk. Had a "fit." Morphine given hypodermically. Became enraged at the doctor and was bound, but broke loose and became violent. In his nightgown rode a distance, yelling loudly; calmed down, and said "he had hydrophobia and must die." January 25th, died in convulsions.—*New York Herald*, January 27, 1888.

CASE XIII.—Man (William Bowen, Atlanta, Ga.), twenty years old. About December 1, 1887, savagely attacked and hand and arm badly lacerated by a large dog. (No history of dog.) The wounds healed rapidly. January 28. The young man had nausea, spasms, and delirium. At the sight of water he howled, whined, and frothed at the mouth. *Death occurred* January 29, 1888.—*New York Herald*, January 31, 1888.

CASE XIV.—Girl (Mary Riley, West Chester, New York), nine years old. Bitten badly about December 18, 1887, on the leg by a large Newfoundland dog (no suspicion of rabies). Wound healed rapidly. About February 8, 1888, she was bitten in the face and neck by the same dog, which was then killed. About March 1 she began to behave strangely, and Dr. McNichol "at once discovered that she had symptoms of hydrophobia." March 7, she began biting like a dog, and became frantic at the sight of water. She tried to bite the doctor and had to be tied down. Opiates "had no effect upon her." *Death occurred* March 8, 1888.—*Philadelphia Evening Telegraph*, March 10, 1888.

CASE XV.—Boy (Arthur Tate, near Carthage, Illinois), eight years old. Bitten March 27, 1888, on the face, by a large shepherd dog, which afterward attacked a man and escaped. The wound was carefully cauterized. April 26 he acted strangely, and soon had spasms and snapped and bit and

went into convulsions at sight of water. Physicians were called and said he had rabies. The boy was tied to the bed and held by three men, and was given "powerful opiates, which did not allay the awful spasms." *Death occurred* April 29, 1888.—*New York Herald*, May 1, 1888.

The tabular statement of the foregoing cases, which I have prepared, will spare me the trouble of a detailed analysis. But, I would call your attention to a few points which have impressed me in studying it.

1. *The effect of anticipation of hydrophobia.*—This is said to have been present in seven of the fifteen cases, and may be suspected in more.

2. *The lack of evidence of rabies in the animal which did the biting.*—Not one of the animals furnished more than ground for a suspicion that it was rabid. The fact that a fighting dog bites a man who interferes with it, is no evidence that it is rabid, nor is the manifestation of a vicious temper a good evidence of rabies. The same may be said of death in a fit.

3. *The effect of a diagnosis of hydrophobia.*—In ten of the fifteen cases it is stated that the physicians made an early diagnosis of hydrophobia, and presumably they failed to conceal the fact from the patient.

4. *The effect of applying the test of the water.*—This is said to have been done in seven of the fifteen cases, and it was probably done in almost all of them.

5. *The assertion that canine symptoms were present.*—Five of the patients are said to have whined, or howled, or snapped, or bitten at their attendants.

6. *The frequency of forcible restraint.*—This is said to have been employed in eight of the cases.

7. *The uselessness of administering narcotics.*—Powerful narcotics are said to have been used in ten of the cases; and they were probably used in all. Curare is said to have been used in four cases.

You will, I trust, permit me to think that my prolonged study of hydrophobia has produced something which may be called an opinion—not prejudice—in regard to its nature and treatment; and I should be a coward if I hesitated to express my opinion for fear that I should once more be accused of prejudice.

I have on several previous occasions declared my belief that hydrophobia is not a specific inoculable disease. I believe this more firmly to-day than ever before. I do not deny that men and

TABLE OF CASES OF SO-CALLED HYDROPHOBIA IN THE UNITED STATES FROM JUNE 1, 1887, TO JUNE 1, 1888.

Case No.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	
Male	1	...	1	1	1	1	1	1	1	1	...	1	1	...	1	*Case I. Wound said to have been dressed.
Female	...	1	...	...	...	...	...	...	...	...	1	...	...	1	...	Case II. Said to have had typhoid fever.
Age (years)	Adult	20	Adult	23	78	27	Adult	Adult	...	52	Adult	18	20	9	8	Case VII. No history of a bite.
Incubation (days)	26	105	90	40	38 years	35	...	49	90	45	49	55	60	75	30	Case X. By no means clear that he was bitten at all.
Species of animal	Dog	Dog	Dog	Cat	Dog	Dog	*	Dog	Dog	*Dog	Dog	Dog	Dog	Dog	Dog	Case XI. Said to be bitten severely, but not where.
Location of bite	Thumb	Back and shoulder	Hand	Hand	Hand	Little finger	...	...	...	*Lip	*	Nose	Hand and arm.	*Leg, face and neck	Face	Case XIV. Bitten on leg about Dec. 18, 1887, and on face and neck about Feb. 8, 1888.
Wound cauterized	#1	...	...	...	1	1	...	...	...	...	...	...	...	...	1	Case I. Morphia and atropia.
Dog died soon	1	...	...	...	...	...	...	...	...	1	1	...	...	...	1	Case IV. Quieting medicines
Dog savage	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	Case V. Morphia in 5 gr. dos.
Dog fighting at time of bite.	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	Case VI. Morphia and curare
Dog said to be strange	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Case VII. " "
Patient said to have anticipated hydrophobia.	1	...	...	...	...	1	...	1	1	1	...	...	...	...	1	Case VIII. Chloral and curare.
Hydrophobia diagnosed.	1	...	1	1	1	1	1	1	...	1	...	...	...	1	1	Case X. Morphia, curare, chloral, and chloroform.
Horror of water stated	1	1	1	1	1	1	...	...	1	1	1	1	1	1	1	Case XII. Morphia.
Patient tested with water	...	...	1	1	...	...	...	...	...	1	...	1	1	...	1	Case XIV. Opiates.
Dog-like symptoms	...	...	1	...	...	1	...	...	...	...	...	...	1	1	1	Case XV. Powerful opiates.
Forcible restraint used	...	...	1	...	...	1	1	1	1	...	...	1	...	1	1	Case X. A "mad-stone" was applied to wound.
Powerful narcotics used	1	...	...	1	1	1	1	1	...	1	...	1	...	1	1	

women and children sometimes fall into a peculiar state after a dog-bite, and die in due time. But I do deny that this is attributable to any specific virus in the dog's saliva. The same thing has occurred too often from other causes to justify one in charging it to a specific virus when it follows a dog-bite. And, I believe that the rejection of the specific theory will do more to banish hydrophobia from the world than anything which we have ever heard of.

The word "hydrophobia" should be used only to describe a condition—and not a disease—as we use the word "convulsions," and it should be remembered that this condition may be present in a great number of diseases, as I tried to show you when you last met in this city, in 1884.

I firmly and honestly believe that if this view of what is called hydrophobia were generally accepted, the disorder would shrink and disappear, as the geni is said, in the tales of the "Arabian Nights," to have shrunk and disappeared when the right word was spoken. And, I call your attention to the fact that hydrophobia is now almost unknown in our own State of Pennsylvania. Not a single case has occurred in our State since we last met, and I cannot but attribute this fact partly to the extent to which your judgment confirms the opinions to which my studies of hydrophobia have led me.

I do not despair of seeing the belief in hydrophobia follow the belief in witchcraft, which once had the support of Church and State, of the medical profession and the laity, but which now, thank God! torments our fellow men no more. So long, at least, as Pennsylvania presents the spectacle of freedom from the thralldom of ancient superstitions in regard to hydrophobia, and freedom from its curse, I cannot but think that the former has some causal connection with the latter.

